6:Fawcett G-5 (ca. 1900)1915
AWll Kerala AWll
Nayar

by the big cadjan umbrellas of the female inmates of the Illam. On the third day the door is opened, and whatever remains in the vessel of the dough and milk placed there is thrown into a tank as unfit for human use. The mixing up of noorum palum and the performing of the poojahs are done by the eldest female member of the Illam. The noorum palum is made of rice-flour, saffron powder, cow's milk, water of the tender cocoanut, fruit of the Kadali plantain, and ghee. In the Nálukettu of the house, offerings of noorum palum and cooked rice, as well as kuruthi (a red liquid composed of flour, saffron and chunam), take place every Ayilyam (star) day. Every morning the king and queen of serpents are washed, and an offering of fruit and milk is made to them; in the noon offerings of Vellanivedyam (cooked rice) and afterwards of fried grain (malar) follow. During the month of Kartika, a special poojah called navakom and offering of noorum palum are daily observed. On the Sivarátri day, in the month of Másí, the customary five poojahs and navakom are performed, and in the evening of the same day sacrificial offerings to the serpents and kuruti, as stated above, are made, and at the conclusion of the day's poojahs the idols are taken in procession round the temple. On Ayilyam (star) days, in the months of Purattási and Alpasi, all the serpent idols in the grove and the temples therein are taken in procession to the Illam, and offerings of noorum palum, kuruti and cooked rice are made there in propitiation of the serpent gods. The person who carries the idol of the Nágarája is the eldest female member of the Illam, and the procession is conducted with great pomp and rejoicings. According to my informant, the eldest female member of the house, though married, is expected to lead a celibate life when she becomes the oldest female in the family. During the festive days at Mannārsāla, about 5,000 people assemble to worship and propitiate the serpent gods, and their offerings include gold and silver coins, and gold, silver, copper or stone effigies of snakes, grains of all kinds, pepper, salt, saffron, tender cocoanuts, bunches of Kadali plantain, melons, oil, ghee, sandalwood, silk and other pilgrims. On the day previous to the Ayilyam ceremonial, about two or three thousand Brahmans are fed. The annual expense of this institution and worship at Mannārsāla is estimated at about 2,000 rupees. The kâvu has its own paddy fields and gardens, from the revenues of which it is maintained.

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9:Iyer E-4, 5 (ca. 1902-1906)1912
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Nayar

536 intermittently blown. Such are the crude theatrical properties which the actor has to face.

[533] At about eight o'clock begins the *Thódayam purapád*, consisting of songs which are meant to initiate the audience into [782] the mysteries of the plot. But this takes place behind the drop curtain, which has not yet been drawn up. Next comes the *Vandanaslókam*—a song in propitiation of some particular god—and then begins the play. The actors perform only by means of dumb-show, and the music is provided by the singers who, though invisible, are close at hand. All changes of thought, feelings, and emotions are conveyed by means of gestures of which there are said to be sixty-four different kinds, and in the commingling of these, lies the skill of the actor. Inhuman and unchivalrous acts, such as chopping off the noses and breasts of women, are usually enacted behind the scenes; though, in certain cases, these are made realistic by the characters to be victimised wearing false noses and breasts. [435] It is not until the dawn of day that the play ends. The cost of a night's performance is only about fifteen rupees, while the cost of all the stock in trade is often less than 400 rupees.

536 176 A special innovation in this direction was made by the Valia Kovil Tampurán of Travancore and others who translated a few of the most important Sanskrit dramas. They introduced a real improvement in the construction of the stage and scenery, as also in the mode of dress, the style of music, and the method of acting, all of which were changes for the better. Dramatic companies were organised in many places where the plays were acted. They were at first very popular, but most of them disappeared as they did not play; but yet poets and versifiers still continue their work of producing plays for the stage.

536 *Mohiniyáttam.*—This is an institution, very much like the nautch of the East Coast. A leader (*Nettuvan*) obtains the service of two or three young girls of low birth and trains them for the performance. He takes the girls from house to house, gets a paltry allowance for each day's performance, and thus makes a living. The performance is usually acted at night, when the girls, dressed in the gaudy attire, are led by [654] the *Nettuvan* in an amorous dance. This is an abominable institution, and the women who are thus rented out are looked

11: India G-4, 5 (1960-1961) 1962 AWII Kerala AWII

5.33 The introduction of about 1,600 mechanized boats during the next decade is not likely to subject Kerala's fishing grounds to undue pressure. A beginning may be made with 600 such boats during the Third Plan. The cost of a new mechanized boat (engine, fishing gear and equipment) would be about Rs. 29,000. It is desirable to continue with the present pattern of financial help to the fishermen for boats and gears in the form of loans and subsidies for some time to come.[1] A subsidized mechanized boat would cost about Rs. 19,000. This amount should be advanced to the fishermen by the Government as a long-term loan. On this basis, the total capital cost of putting 1,600 mechanized boats into operation during the next 10 years will be of the order of Rs. 4.64 crores (Rs. 1.76 crores as subsidy and Rs. 2.88 crores as loan). The consequential annual production is expected to be of the order of 30,000 tons by the end of the Third Plan, and 80,000 tons by the end of the Fourth Plan. The value of the additional production of 80,000 tons will be Rs. 2 crores.

5.34 These mechanized boats should be operated from a select number of Integrated Fisheries Development Centres, each centre being provided with such basic facilities for the fishing industry as the supply of oils and lubricants, refrigeration, processing, etc. The establishment of a number of such Integrated Centres should be the utilimate aim. The Indo-Norwegian Project has already developed an Integrated Centre at Neendakara. About 15 of these centres may be established during the next two Plans. Among other places, Quilon, Alleppey, Cochin, Azhikode, Ponnani, Beypore, Tellichery, Cannanore and Balliapatam would provide good sites for developing such centres.

5.35 The introduction of 1,600 mechanized boats will create employment opportunities directly for about 6,400 fishermen. In order to obviate the unemployment situation, the Government may undertake a programme of supplying about 6,000 indigenous boats which will create employment for about 22,000 fishermen by the end of the Fourth Plan. The average cost of an indigenous boat with the necessary gear would be Rs. 2,000 (Rs. 1,000 for the craft and an equivalent amount for the gear). A subsidy of 25 per cent on the cost of the boat and another 33⅓ per cent on the cost of gear may be given to the fishermen. The total capital cost on 6,000 boats would be about Rs. 1.2 crores. The additional catch from these indigenous boats is expected to be of the order of 60,000 tons per annum by the end of 1970-71, valued at Rs. 1.5 crores.

5.36 The existing boats can increase their catches considerably if they are provided with better fishing gear. At present there are about 22,000 indigenous crafts in the coastal waters of Kerala. Initially, at least a third of these boats should be supplied with better gear. The cost of such a programme would be about Rs. 85 lakhs. At the present rate of subsidy of 33⅓ per cent, the Government's share in this cost will be Rs. 28 lakhs. An additional production of 25,000 tons of fish valued at Rs. 62.5 lakhs may be expected by the end of the Fourth Plan.

5.37 Thus, the development of coastal fisheries would entail a total investment of about Rs. 7 crores, of which Rs. 3 crores would be required during the Third Plan. As a result of this investment, an additional annual production of 80,000 tons valued

[1] A subsidy of 50 per cent is given on the cost of engine, 25 per cent on that of hull, and 33⅓ per cent on that of gear and tackle.

11: India G-4, 5 (1960-1961) 1962 AW11 Kerala AW11

Transport

5.46 The entire coastline of Kerala is well served by the railways. From Trivandrum to Kayankulam and from Tirur to Manjeswar, a total distance of 220 miles, the tracks are only two to three miles from the sea coast. In addition, there is a motorable road running almost all along the entire coastline. Head loads, bicycles, motor lorries, all these modes are employed for the transportation of fish to the markets depending on the distance of the landing sites from the consuming centres.

5.47 The State Fisheries Department operates four insulated vans. In addition, the Department operates two insulated carrier boats, one from Cochin and the other from Azhikode. These boats transport iced-fish through the inland waters to the interior places. For the marketing of fish in the interior areas, the Indo-Norwegian Project operates eight refrigerated vans.

5.48 It is estimated that the State will require about 60 road vehicles and 20 carrier vessels during the next 10 years. The capital expenditure on these is expected to be about Rs. 40 lakhs, of which Rs. 15 lakhs would be required during the Third Plan. The trucks and carrier vessels should, as far as possible, be owned and operated by Fishermen's Cooperative Societies. Expansion of insulated wagon facilities on the railways will be equally necessary. Insulated wagons should be provided on routes connecting the major production centres with the consumption centres.

Marketing

5.49 The marketing of fish in Kerala is not well organized. At present it is controlled by a few moneylenders and fish merchants. The fishermen are very poor and have generally to depend on borrowings during the off season. A departmental survey reveals that in 1958 the fishermen in Kerala had total assets of only about Rs. 30 lakhs against a total debt of Rs. 135 lakhs. Only a small percentage of the fishermen in Kerala own the boats and nets they use. Most of them work as employees under few boat-owner fishermen. In the pay-off period the boat-owner advances small amounts to the fishermen for their day-to-day needs. The catch is auctioned at the landing centres. The bidders include the fish curers, the retailers and lorry owners, who generally supply fish to the retailers.

5.50 Fish prices fluctuate considerably even in the course of the day. Fish is never weighed in the market. They are measured by standards such as heap, basket, and number; and these vary from market to market. The important wholesale fish markets in the State are located at Trivandrum, Kottayam, Tonur, Trichur, Kozhikode, Alwaye, Changanacherry and Athirumpuzha.

5.51 Changanacherry, Athirumpuzha and Vaniyankulam are the most important markets for cured and salted fish. In the coastal areas the consumption of dried fish is confined mostly to the off-season when fishing totally stops. In the interior of the State, owing to lack of transport facilities, cured fish is sold for the major part of the year. The State has a number of retail fish markets, every town or a group of villages having at least one.

5.52 Fish marketing in Kerala requires a great deal of improvement, both

11: India G-4, 5 (1960-1961) 1962 AW11 Kerala AW11

MINERAL RESOURCES: SIZE OF DEPOSITS AND EXTRACTION COST

6.5 In the following pages the importance of the mineral resources, the size of the deposits, costs of extraction—and allied factors, as they affect the industrialization programmes for Kerala, are discussed at some length.

Ilmenite

6.6 Foremost among the mineral resources of the State are the beach sand deposits in Quilon district which contain large concentrations of heavy minerals like ilmenite, monazite, rutile, sillimanite and zircon. Some of the ilmenite is of inferior quality due to leucoxenization, particularly along the Neendakara—Azhiyikkal bar.

6.7 The heavy mineral occurrences are of three types:

(*i*) Back beach sand dunes, which form a wasting asset.
(*ii*) Beach washings, which are renewed seasonally during the monsoons.
(*iii*) Sand bar.

In general, the beach washings have a higher content of ilmenite and other heavy minerals than the dunes and the sand bar. The extent of the variations in this respect may be seen in the table below:

	Beach washing (*Per cent*)	*Dunes* (*Per cent*)	*Sand Bar* (*Per cent*)
Ilmenite	75/78	60/70	40
Other heavy minerals	15/20	10/25	—
Quartz	around 50	10/15	60

6.8 Of these, the dune deposits are rapidly being used up; and as for the washings, it is not possible to predict the quantities that are likely to be available from time to time. The main reliance for ilmenite has, therefore, to be placed on the sand bar, the total reserves from which are estimated at 34.08 million metric tons.[1] Another estimate places the reserves at 50 million tons. In addition, there are a few minor occurrences in the lake deposits, and in the interior of the country beyond 500 feet of the shoreline.

6.9 At present, however, nearly half the requirements of raw sand come from the washings and the other half from the dunes. The collection of raw sand is done through contractors who supply the sand to the mineral companies. The dune sand is worked manually with a wooden scraper and the pools are very often not backfilled. Beach washings are merely scraped off the beach wherever they accumulate. The cost of the raw sand from these sources works out to nearly Rs. 8 a ton.[2]

[1] *Peaceful Uses of Atomic Energy*, Proceedings of the Second International Conference, Geneva, 1958, p. 106.
[2] *Quartz sand at Pallipuram*—pits mouth value Rs. 1.50 a ton.

11: India G-4, 5 (1960-1961) 1962 AWII Kerala AWII

135 concentrates from Chavara, the Manavalakkurichi (in Madras State) material being preferred because of its higher thorium content.

317 328 439 6.23 A rare earth factory is located in the State at Alwaye, which processes 1,500 tons of monazite a year ; but it obtains its requirements from Manavalakkurichi in the Madras State. This factory produces Thorium Oxide, rare earth salts and Trisodium Phosphate. The Chavara Monazite may be considered for use in the rare earth factory instead of the monazite from Manavalakkurichi in Madras State, particularly in view of the fact that monazite would be a byproduct of ilmenite which is won in larger quantities in Kerala and may, therefore, prove cheaper.

Rutile

317 6.24 Rutile is another titanium mineral occurring in smaller quantities in the beach sands. The beach washings contain, on an average, about 4 per cent of rutile. A portion of the sand bar at Neendakara is estimated to contain 740,125 tons of the mineral.[1] Kerala is the only State in India producing rutile.

317 328 6.25 At present only one of the mineral sand factory units produces this mineral. Electro-static separators are used in concentrating rutile from the non-magnetic tailings after the extraction of ilmenite. Recovery is one-fifth of the rutile content of raw sand and the rest is allowed to go into the tailings for lack of equipment.

*433 317 328 439 435 6.26 Only small quantities of rutile are produced. During 1959, 482 tons valued at Rs. 4.75 lakhs were beneficiated. The current price is Rs. 1,000 a ton. The mineral is not utilized in the State, but is sent to Bombay and Calcutta for the manufacture of welding rods. During 1957, 155 tons of rutile were imported to meet the requirements of this industry. Future requirements of welding rods within India is estimated to go up from 417 m. ft. in 1960-61 to 2,022 m. ft. in 1970-71.[2] To meet this rise in demand, output of rutile would have to be stepped upto 6,750 tons by 1970-71. An expansion in capacity of this order would require an investment of the order of Rs. 10 lakhs.

Sillimanite and Zircon

135 6.27 Sillimanite as well as zircon occur in small amounts in beach sands in association with ilmenite and other heavy minerals. They average 5.9 per cent and 4.2 per cent respectively of the beach washings. In addition, 1,916,260 tons of sillimanite and 799,350 tons of zircon are estimated to form a part of the Neendakara bar.[3] Only experimental production of either of these minerals has been taken up so far.

*433 317 6.28 Sillimanite is mainly used in refractories, but the internal requirement of sillimanite refractories is very small. Moreover, the material from Assam which is of a massive variety can be shaped into blocks and used directly. Export possibilities are also dim and due to the development of artificial mulite bricks from domestic kyanite in the USA. Exports have dropped from 20,000 tons to 6,000 tons in 1957.

[1] *Peaceful Uses of Atomic Energy*, Proceedings of the Second International Conference, P. 102.
[2] NCAER estimates.
[3] *Peaceful Uses of Atomic Energy*, Op. Cit, p. 102.

6.67 In the erstwhile State of Travancore-Cochin, there were 14 centres of production around Cape Comorin and one at Malipuram, Vyppeen Island, Ernakulam district. Consequent upon reorganization of the States, there is only one salt work in Kerala today. This is reflected in the sudden drop in production to a few hundred tons of salt between 1955 and 1956.

6.68 The prime requisite for the manufacture of salt by the solar evaporation method is a dry climate with accompanying low humidity. Such a condition is rarely obtained anywhere in the State. The result is that the yield of salt is very low with the cost of production at 75 nP. to a rupee per maund (in Tuticorin—cost of production is 25 nP.). In view of the unfavourable climatic conditions, this industry does not appear to have much prospects in the State.

Tile-Clay

6.69 Tile-clay is the raw material for one of the major industries of Kerala viz., the tile industry. More than 150 tile factories operate in the State, providing employment to over 10,000 workers. Tiles produced are sent to other parts of India as well as to markets in some of the Far Eastern countries. The exports are mainly from the Feroke area.

6.70 Local earths, silts and clays are found along the alluvial flats of most of the rivers of the State. Clay collection is seasonal and is undertaken through contractors. It provides employment to about 3,500 people. Collection is done manually and the clay is transported by countrycrafts along the waterways, or by roads, where water transport facilities are not available. Depending on the distance of transportation, the price of clay varies from Rs. 2 to Rs. 5 per ton at the factory.

6.71 In 1865, the 'Basel German Industrialists' started the first tile factory in the country at Mangalore with the object of securing the Far East Market, which was until then being supplied by the French tile industry in Marseilles. The industry then spread rapidly, first to Feroke near Kozhikode and later on to Quilon and other areas, until today, Kerala can well claim to be the home of the tile industry in the country.

6.72 Production of tile-clay in the State during the last few years is given in Table 31.[1]

6.73 As can be observed, there has been a declining trend in tile production. The main part of the decrease has taken place in the major tile producing areas of Trichur and Quilon.

6.74 The decline in output of tiles is due to a shrinkage in the foreign markets. On the other hand, an optimum area for distribution within the internal market is a belt of 400 miles from the coast. In view of the near saturation point which Kerala's tile industry has reached, prospects for increased production of tile-clay are rather bleak.

Other Minerals

6.75 *Gold* : Occurrences of gold in Wynaad and Nilambur area have been known since the late nineteenth century. The discovery of old workings led to the

[1] [Table 31, appearing on p. 291 of the text, has not been processed -- Analyst]

As explained earlier, the effective capacity could not be increased beyond 84.5 MW mainly on account of foreign exchange difficulties.

7.14 The relative shares of various consumers in the coming years will naturally depend on the pace of economic development. Nevertheless, it can be reliably forecast that the relative proportions will not significantly change and industry will retain its predominant place since it is expected that the industrial development will continue to be considered the pivot for economic growth of Kerala.

7.15 Per capita consumption of electrical energy in the State was about 27.75 kWh in 1959-60, which was slightly less than the all-India level of 30.45 kWh.

Regional Distribution of Electricity Facilities

7.16 There is some imbalance in the distribution of electricity in Kerala. The southern districts which were part of the former progressive State of Travancore-Cochin, are more developed from the standpoint of industry and power, whereas the northern districts constituting the Malabar area are comparatively backward. The relative position of different districts in this regard is indicated in Table 34.

7.17 Similarly, the network of transmission and distribution lines also depicts a concentration of electrical facilities in the south or south-central region. Naturally, this has led to a clustering of industries in this area. However, it is possible to even out the position in future by undertaking the extension of transmission lines to the northern parts of Kerala as well. The present programme of extending 110 KV line to the north is a step in the proper direction.

Cost of Power Generation

7.18 One of the outstanding features of power development in Kerala is the low cost of generation. Generally investment per kW of installed capacity is higher in the case of hydro schemes than in the case of thermal power stations. In Kerala, however, the figure for investment per kW of installed capacity is Rs. 750 to Rs. 900 for hydro schemes which is no higher than in the case of thermal stations. Most of the hydro sites are still unexploited and are ideally suitable for hydel generation. Since the catchment areas of hydel projects receive rain from both the south-west and north-east monsoons, the storage capacity required per kW of generating capacity is relatively small which in turn reduces the overall capital cost per kW. It is because of these factors that the initial investment normally incurred in case of hydro-electric schemes in Kerala, excluding transmission and distribution, is as low as Rs. 750 to Rs. 900 per kW of installed capacity against the all-India average of Rs. 1,500 to Rs. 2,000. Not only investment per kW of installed capacity is about the same for hydro and thermal projects in Kerala, the foreign exchange component of investment on hydro schemes up to generation, will also be of the order of only 25 per cent whereas in case of thermal schemes it is about 50 to 60 per cent.

7.19 Since the capital cost of hydro-power in Kerala is exceptionally low, the average cost of generation from the existing hydro stations is only 1.7 nP per unit. In the case of schemes under execution as well as the schemes already investigated,

[Table 34 appearing on p. 293 of the text, has not been processed -- Analyst]

11: India G-4, 5 (1960-1961) 1962 AW11 Kerala AW11

the cost of generation as estimated at present would rarely exceed 2 nP per unit. As against this, the cost per unit of thermal power is estimated to vary between 6 nP to 10 nP for stations which are far from coal fields, as would be the case if Kerala were to go in for thermal generation. Table 35[2] presents some factual data regarding the cost of hydro-power generation.

7.20 Development of thermal power resources sometimes becomes necessary as a stabilizer for fluctuations in generating capacity of hydro dams caused by variations in the extent of rainfall. This problem does not arise in case of Kerala since a high level of rainfall which, in addition, is fairly well distributed over the year, is practically assured. As pointed out in another chapter, the co-efficient of mean deviation for annual rainfall in the case of Kerala is one of the lowest in the whole of India.

7.21 On account of these factors, electric energy from hydro resources would continue to occupy a predominant place in Kerala. The possibility of generating nuclear power within the foreseeable future can almost be ruled out for Kerala. Investment in nuclear power stations is of the order of Rs. 1,800 to Rs. 2,500 per kW of installed capacity, which is higher than those for thermal and hydro stations. Since Kerala has plenty of untapped hydro-power potential, the question of using nuclear energy does not arise.

DEMAND FOR AND SUPPLY OF POWER

7.22 The simultaneous maximum demand, as recorded on the State electricity system, reached a peak of 94 MW during September, 1960. Over and above this, purchase from Madras State for Kerala system was about 8.6 MW and from Kerala to Madras was about 2.6 MW. So the net draw from the Madras system during September, 1960, was of the order of 6 MW. Hence the latest recorded demand on the State may be taken to be of the order of 100 MW during Sepember, 1960, as against the available firm capacity of 84.5 MW.

7.23 In this context, an independent forecast may be attempted here on the basis of projections for industrial output made in the chapter on Industries. Factory sector is the main industrial consumer of electricity accounting for roughly 65 per cent of energy generated. The net output of factory industry is projected to increase from Rs. 24.4 crores in 1960-61 to Rs. 89.2 crores in 1970-71. In 1955-56, power consumption by industries corresponding to net factory output of Rs. 18.40 crores was 224 million kWh. In other words 1.24 units of electricity were used to produce one rupee worth of net output in industries. The corresponding ratio for the country was 0.8 kWh/Rupee. The relatively higher coefficient in Kerala reflects the more power-intensive industrial structure. This is mainly due to the location of aluminium and other electro-chemical industries in Kerala.

7.24 According to NCAER's projections[1], the power intensity of industries may be expected to increase both as a result of the spread of power-using equipment and

[1] *Demand for Energy in India* (1960—75), NCAER.

[2] [Table 35, appearing on p. 293 of the text, has not been processed — Analyst]

11: India G-4, 5 (1960-1961) 1962 AWII Kerala AWII

Eleven per cent non-productive consumption contributes nearly 60 per cent of the total revenue. This is much more than its reasonable share. This amount of subsidy cannot be easily justified. Domestic consumption alone forms only a little over 7 per cent of the total consumption, contributes over 51 per cent of the total revenue from the sale of power. This is much too high a share.

7.39 There was a small, generally upward, revision of rates in December 1958, without materially altering the structure of the tariff. The above conclusions, therefore, still hold good.

7.40 Amongst the non-productive classes of load, item iv (Table 36) Public Water Works and Sewage Pumping is billed at "Industrial Rates" and classified as industrial loads for the purpose. In respect of item iii (Table 36) Public Lighting, the revised tariff of December, 1958 provides a rate of "15 nP per kWh for lamps for the first 6 hours of burning and 12 nP per unit for the remaining hours". This rectifies the high average rate per kWh in 1957-58, as seen in the above statement. The average unit rate per kWh of domestic consumption comes to as much as seven times the average selling rate of the total consumption through all categories of load. It is 15 times the average rate for productive consumption. The tariff revision of December, 1958 does not relieve this position. This is important. The structure of the domestic tariffs could induce optimum utilization of installed capacity with better load factor, but the domestic rates themselves have to be reduced substantially. In a State which leads the rest of the country in economic power generation, this should not be difficult. The "power surplus" position of the State can also enable the State to take effective steps to make cheap power (though costlier than productive power) available for domestic consumers extensively and may substantially raise the total domestic consumption to a higher level. In the light of the above observations, it is recommended that the State should review and revise its tariff policy for power sales.

POSSIBILITY OF POWER SHORTAGE

7.41 It is learnt that power shortage is adversely affecting some of the existing big industries which are heavily dependent upon adequate power supply for their full production. Besides, starting of new industries may be hampered unless adequate power supply is forthcoming, or at least, the present power shortage is removed.

7.42 A careful analysis of the power situation in Kerala shows that there will be no danger of a prolonged serious power gap. On the generation side, according to the present plans the Panniar Power Station with an installed capacity of 30,000 kW and the Sholayar Power Station with an installed capacity of 54,000 kW are expected to be commissioned in 1963 and 1964 respectively. Two of the six generating units of 50,000 kW each in the Sabarigiri (Pamba-Kakki) Power Station are also expected to be commissioned by the end of 1964 by which time the State will reach a very comfortable position in regard to power supply.

7.43 Any suggestion for setting up thermal power stations in the State to bridge the likely gaps in power supply will have to be examined in this context. As already pointed out, thermal power generation costs more, both in terms of the cost of genera-

11: India G-4, 5 (1960-1961) 1962 AW11 Kerala AW11

sufficiency, Kerala should play the role of a net exporter of electric energy to these States. A zonal grid which is now planned to be laid in the South, is essential to make the most economic use of the power generating potential of the Southern States. Since the cost of electric generation is much lower in Kerala than in Madras or the other neighbouring States even after including transmission costs, Kerala may also be in a position to earn net revenue through export of electrical energy to the neighbouring States. This revenue could be utilized for capital formation within Kerala.

7.49 The State should review and revise its tariff policy for power sales specially with reference to consumption of power for domestic purposes.

11: India . G-4, 5 (1960-1961) 1962 AWll Kerala AWll

TABLE 9

VALUE YIELDED PER ACRE

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Name of commodity	*Percentage value contributed*	*Percentage of gross cropped area occupied*	*Average value of produce per acre* (in Rs.) (1956)
Paddy	25.0	35.8	211.9*
Pulses	0.2	2.3	33.0
Tapioca	4.3	10.2	140.0
Banana	4.7	2.1	732.8
Sugarcane	0.7	0.3	722.2
Pepper	4.0	3.9	331.7
Ginger	1.6	0.4	1077.0
Cardamom	1.7	1.3	434.8
Arecanut	5.5	2.6	687.5
Cashewnut	2.1	1.7	408.6
Coconut	27.5	20.2	446.2
Groundnut	0.5	0.6	242.4
Rubber	3.8	2.9	425.0
Coffee	0.9	0.8	390.2
Tea	7.9	1.5	1434.3
Others	11.8	13.2	294.0
	100	*100*	*Gross Average = Rs. 337*

TOTAL GROSS VALUE = Rs. 180 crores. TOTAL CROPPED AREA = 5466 thousand acres.

* Figures given in this column are average values produced per acre gross of costs of cultivation and hence are not comparable with the net average of Rs. 361 per acre mentioned previously.

11: India G-4, 5 (1960-1961) 1962 AWII Kerala AWII

TABLE 17

GROSS VALUE OF OUTPUT FROM ANIMAL HUSBANDRY IN KERALA

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(Rs. lakhs)

Item	*1955-56*	*1956-57*	*1957-58*
Milk consumed as such	531	540	561
Other milk products	593	604	608
Beef	56	58	62
Buffalo flesh	18	19	20
Mutton	93	97	98
Hides and Skins	29	30	31
Bones and Horns	6	7	7
Eggs	84	121	136
Poultry	72	78	84
Dung	321	381	394
Increment in stock	96	113	116
Miscellaneous	4	4	3
GROSS VALUE OF OUTPUT	*1903*	*2052*	*2120*

SOURCE: *Regional Income of Kerala* (At current prices) 1955-56 to 1957-58: Government of Kerala (1960). [113]

TABLE 18

LIVESTOCK POPULATION OF KERALA—MAJOR CATEGORIES, 1951 AND 1956

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Category	*Total*		*Percentage of increase (+) or decrease (—) in 1956 over 1951*
	1951	*1956*	
Cattle	2,151,522	2,510,376	+ 16.7
Buffaloes	444,368	487,653	+ 9.7
Sheep	423,513	97,820	— 76.9
Goats	423,345	955,370	+ 125.7
Horses and Ponies	518	1,690	+ 226.2
Mules	14	2	— 85.7
Donkeys	689	1,415	+ 105.2
Pigs	117,932	113,711	— 3.6
TOTAL LIVESTOCK	*3,561,901*	*4,168,237*	+ *17.1*
Fowls	3,854,319	6,462,799	+ 67.6
Ducks	263,147	322,085	+ 26.2
Others	..	161	..
TOTAL POULTRY	*4,117,466*	*6,795,045*	+ *65.1*

235

SOURCE: *Statistical Outline of Kerala State, 1960.* [113]

[Pp. 280-282 not Processed]

Il: India G-4, 5 (1960-1961) 1962 AWII Kerala AWII
Il: India G-4, 5 (1960-1961) 1962 AWII Kerala AWII

Appendix 6

433
435

Statement Showing Outturn of Minor Forest Products During 1958-59

Items	Unit	By Government agency		By purchasers		Total Amount (Rs.)
		Quantity	Amount (Rs.)	Quantity	Amount (Rs.)	
1	2	3	4	5	6	7
A. Cardamom lease	lbs.	159	320.50		21191.68	23512.18
B. Honey (Big bees)	Tons	..	..	244		..
-do- (Small bees)		..	..	..	..	..
Wax		..	..	..	..	..
C. Ivory-Tusks	lbs.	1565.75	32483.00	..	..	32483.00
Serivelloes	lbs.	31.80	226.00	..	..	226.00
Elephant teeth	lbs.	88.00	25.62	..	..	25.62
Bamboo	No.	6607	620.12	6617.08	66720.99	67341.11
D. Bamboos						
,, Chillies	Head loads	..	..	163	7.24	7.24
,, Chillies	No.	..	..	29100	582.00	582.00
,, Thorns	Head loads	..	..	324	40.00	40.00
,, Thanayam Bamboo	No.	..	..	50	1.50	1.50
,, Local Mongal	No.	..	..	109800	6588.00	6588.00
,, Kalmongal	No.	..	..	54800	4392.00	4392.00
Split Bamboo	No.	..	..	2950	142.50	142.50
Sale of bamboo coupes		..	..	..	20355.00	20555.00
Reeds (Paas)	No.	4050	20251	1860393	72698.64	72718.89
(Air dry)	No.	..	..	1600025	6000.42	6000.62
(Air dry)	Tons	..	..	3975-1796 Tons Cwt. lbs.	11928.67	11928.67
(Ticket)	No.	..	..	227010	908.04	908.04
(Leases)	No.	..	..	9750	5130.50	5130.50
E. Rattans (Round)	No.	25	0.50	765970	13812.70	13813.20
(Split)	No.	..	..	73315	41313.90	41313.90
Sales of Rattan coupes		..	..	..	31580.00	31580.00
F. Miscellaneous						
(1) Vekka			..	..	4845.89	4845.89
(2) Vekka fibre	Head loads	..	..	2706	985.25	985.25
(3) Kynansticks	Cart loads	..	..	5	3.75	3.75
(a) -do- fibre	Head loads	..	..	3	0.57	0.57
(4) Kulavoo oil	..	..	..	..	..	..
(5) Manwoo leaves	Head loads	..	..	3078	311.06	311.06
(a) -do-	Cart loads	..	..	966	966.00	966.00

(Continued)

11: India G-4, 5 (1960-1961) 1962 AWII Kerala AWII

Appendix 6 (Continued)

1	2	3	4	5	6	7
(6) Metal	Cart loads	..	..	42400	477.00	477.00
(a) -do-	Cart loads	..	..	1077.5	576.25	576.25
(7) Rubber		..	..	..	2826.85	2826.75
(a) -do-	lbs.	..	..	1418	708.75	708.75
(8) Gravel	Cart loads	..	..	287	71.75	71.75
(9) Laterite	Cart loads	..	..	1081.5	32.87	32.87
(10) Sand and Earth	Cubic feet	..	..	9475	146.12	146.12
(a) -do-	Cart loads	..	..	593	148.25	148.25
(11) Thatching grass	Cart loads	..	..	279.5	279.86	279.86
(a) -do-	Head loads	416	26.0	999	351.17	371.17
(12) Grassing fee			437.00	..	37169.75	37606.75
(13) Minor forest produce lease		..	735.00	..	83611.38	83611.38
(14) Rubber Dn. Lease		..	..	..	2123.00	2123.00
(15) Taungya Lease			8291.10	..	49627.50	57918.60
(16) Cashew plantation lease		..	5635.00	..	2401.00	8036.00
(17) Food production lease		..	..	..	28258.94	28258.94
(18) Miscellaneous lease			580.88		2147.38	2728.26
(19) Koona leaves	Head loads	..	..	25	1.56	1 56
(20) J.N. Poles	No.	25	20.00	5820	1580.00	1600.00
(21) J.N. Twigs				..	..	..
(22) Creepers						
(23) Thai Posts						
(24) Fodder grass						
(25) Eauthal Leaves						
(26) Pruning fee						
(27) Kanakamukw	No.	..	..	117945	1179.25	1179.25
(28) Wild plantation leaves		..	..	5	0.31	0.31
(29) Ginger		..	..	..	..	..
(30) Groves & boodlers	cft.	..	..	8950	181.00	181.00
(31) Coconut tope lease		..	..	..	11873.00	11873.00
(32) Tae	lbs.	192.00	192.00	..	..	192.00
(33) Seeds	lbs.	378	94.50	..	..	94.50
(34) Grass and leaves	Sheaves	49250	493.00	..	..	493.00
(35) Elephant tail hair	No.	200	300.00	..	..	300.00
(36) Land lease	Acres	..	..	368.68	2236.31	2239.31
(37) Site lease		..	..	6.70	30.00	30.00
(38) Road tax	..	..	..	..	4150.00	4140.00
(39) Elephant liver	..	..	..	..	163.34	163.34
(40) Vekka drag ropes	Nos.	..	..	30881	7720.25	7720.25
(41) Value of pit fallen animals		..	..		57.00	57.00
(42) Azolala	Head loads	..	..	4	0.25	0.25
(43) Ithy Beerk	No.	..	..	6	1.50	1.50
(44) Miscellaneous sales	..	..	93.00	..	..	93.00
(45) Teak stump	..	..	..	2	20.00	20.00
(46) Departmental compound Lease		..	..	..	780.23	780.23
(47) Pepper	lbs.	..	..	30	30.00	30.00
(48) Bamboo 30' (Export)	No.	..	..	5800	1044.00	1044.00
(49) Reeds (export)	No.	..	..	245700	2456.00	2456.00
(50) Other items	..	..	..	..	1393.66	1393.66
TOTAL			*80,296.47*		*519,961.98*	*599,361.43*

[Pp. 334 — 369 not Processed]

12:Peter E-5 (1939, 1949)1963 AWII Kerala AWII
Kammalans

thayam was followed and caste, or rather sub-caste, endogamy. There was more polyandry in the second generation of this family than in any other encountered so far. I found that Kunji was married to two husbands; Lakshmi, aged thirty three, to four husbands; Paru, thirty, to two husbands; Sita, twenty eight, to three husbands; and Narayani, already mentioned, to two husbands. All the respective husbands were brothers, and only fraternal polyandry was practised. The women had all married early: Kunji and Yakshmi at sixteen, Paru at fifteen, Sita a bit later at twenty four, and Narayani, the youngest, at eighteen. The reason for which Sita had married later was that she had been taken by the three younger husbands of her elder sister Lakshmi, after seventeen years of marriage with the latter. Only Kanju, the eldest, had remained with Lakshmi, and Raman, Narayan and Krishna had decided to marry Sita jointly, when they found that she was not getting married and showed no inclination to do so outside. The two younger brothers of the Mudrikkelparampil household, Raman and Kunyuni, were eighteen and sixteen when they took Nani to wife; she was now twenty. Polyandry certainly did not look as if it were dying out in the blacksmith's caste, judging, at least, from this striking example.

The property upon which the family lived was worth four thousand rupees. It consisted of the house, some agricultural implements and a paddy field. The people were tenants of the Nambudri Brahmin *janmi* Kodierthamana, and paid him the rent of a customary *verumpattam* nine rupees yearly, plus a renewal fee of thrice the rent every twelve years. Poreyn and Kunyuni were practising smiths, hence the implements we had seen on coming in, and Raman worked at the Metal Industries Ltd. in Shoranur, where we camped. They also cultivated the paddy field to produce some of the rice they needed themselves, although the yield was not very great. The genealogy is given in Table 12.

On the 15th of November, 1949, together with interpreter and guide, I visited a family belonging to the third sub-caste of the Kammalans, that of the carpenters or *Asari* (often pronounced *Ashari*). I heard that laterite-cutters called *Puri-asari* or "mud carpenters" were assimilated to these people, but that they only constituted a division of the sub-caste. They are also reputed to be polyandrous; I did no have an opportunity, however, to verify this myself.

The *Asari* whom I saw that day, lived at Palappuram, a village on the main Shoranur-Palghat road, some few miles east of Ottappalam. The compound of the house was by the side of the road on the right, just beyond the village, coming from the west. It was a very poor looking

[Text continues on p. 199]

31: Slater S-5 (1916-1917) 1918 AW1 India
31: Slater S-5 (1916-1917) 1918 AW1 India
Kerala AW11

351 useful for cookery are watered and grown in the compound itself; while during the rains also vegetables are grown, such as brinjals, lady's fingers, pumpkins, peas, etc. During summer the trees and vegetables in the compound are watered from the well which is a special feature of every house.

242 *Insect-pests.*—The *caterpillars* of certain moths ate away this year (1916) the tender blades of the paddy as soon as they cropped up from underground. This appeared at the beginning of the sowing season (May) and lasted for a week or two. Farmers here say that these have not appeared for years past. When I wrote to the Agricultural Superintendent of the State at Trichur he suggested the following remedy: "Dig a trench ½ foot wide by 1½ feet deep along the four sides of a field where these insects would fall in their travel from field to field, but would not be able to get out of it."

A kind of fly or flea is said to eat away the juice of the rice at the stalk of the paddy as soon as it reaches the milk stage.

232 *Cattle diseases.*—Sore feet. The feet are well washed with hot water, and turpentine, teak-oil, or cashewnut oil is smeared in the sore; the animal is also made to stand in a muddy place into which the leaves of a certain tree are strewn.

Mouth disease. Pig-ghee or bear-ghee is smeared on the tongue.

Swelling in the belly. The animal without any apparent cause falls down and dies. No medicine is applied in such cases.

Malignant sore-throat and cow-pox are also common.

[654] An Agricultural Department for the State has been established recently at Trichur with a model farm attached to it. The present Superintendent is an England-returned Cochinite. Help is often derived from here, but the farmers themselves are shrewd in practical agriculture.

313 *Timber.*—Wood for fuel, implements, buildings, etc., is obtained from the neighbouring hills and forests. The taluk of Talapilli is full of forests especially on the eastern side. Nearly 43 per cent of the area of the State is forest and its timber is even exported to foreign parts. The Forest Department is a source of income to the State.

[482] Coolies carry faggots of fuel on their heads from the neighbouring hills for sale; sometimes the people get cart-loads; a decent [435] head-load now costs nearly 4 annas and a cart-load from Rs. 2-8-0 to Rs. 3; prices were much lower a few years back. A full head-load is divided into smaller bundles before being sold, and a woman may get six or eight annas for a bundle as heavy as she can carry.

Durable building materials are got from the forests and timber depots, but mango-planks, bamboos and jack-tree planks are also used.

342 *Houses.*—Houses are not built in rows. Every house is surrounded by a compound hedged round by bamboo. Such compounds are intersected by lanes. Rice-straw is used in thatching houses; tiles are replacing thatch but the majority of houses still are thatched. No terraced houses can be seen in these parts where the monsoon rains pour down with full force.

31: Slater S-5 (1916-1917) 1918 AWI India
31: Slater S-5 (1916-1917) 1918 AWI India
Kerala AWII

435 Site values of land for building are getting higher and higher in the 'town', chiefly because the Shoranur-Cochin Railway now runs through this place, the principal offices of the taluk are here, and a high school has just been opened. Rs. 500 per acre may be paid in the 'town'; Rs. 50 to Rs. 100 in the rest of the village area. But the best wet land fetches up to Rs. 1,500 per acre. Cultivable land fetches far higher prices than building land, because only land unfit for cultivation, of which there is enough, is used for building.

423 [343] The practice of exchanging lands is unknown. Generally, though not always, holdings are continuous. Field huts, built in the midst of their fields, are often used by big farmers. The seeds, the harvested paddy and other crops, the stock, the implements, etc., are kept there.

286 *Subsidiary industries.*—Weaving is not practised. In the north-eastern part of the State, however, handloom weaving of an exquisite sort and also of a rough character is practised.

285 735 [787] [791] Mat-weaving of an exquisite pattern out of certain reeds duly coloured is practised by a set of people locally known as 'Koravas.' The condition of these men, however, is miserable. They have no capital, no organization or culture, but usually make their wares to order, though now and then a few enterprising middlemen avail themselves of these people's skill. They talk a jargon of Tamil and Malayalam, and their females, like gipsies, beg from house to house and profess themselves to be adepts in palmistry. They make mats costing from Re. 1 to Rs. 15 or Rs. 20. They yet live from hand to mouth; and I have my doubts whether they will be able to keep up their skill unless knowing people help to raise their economic condition.

564 [595] [783] Every village moreover contains within its borders the following castes who follow their hereditary crafts:—the Marasari (carpenter), Kallasari (mason), Tattan (goldsmith), Musari (brazier), Kollan (blacksmith), and Tolkollan (leather-worker). There are a few families of each of these castes in Watakanchery also. "As their services are much in requisition and as they earn better wages than unskilled labourers, they are still engaged in their hereditary occupation. The first five groups are socially in a par with each other. They all interdine, but do not intermarry. But the Tolkollans are considered inferior in status to the rest and cannot touch them without causing pollution, probably on account of their work in leather which in its raw state is considered impure. Polyandry of the fraternal type was prevalent among them, several brothers marrying one wife and the children being treated as common to all. This practice however is fast dying out, if it has not already done so." (Census Reports.) One special feature in the caste-hierarchy is that these people are made to stand at a specified distance while approaching the higher castes (24 feet is the rule).

466 326 These castes minister to the every day needs of the community, executing their work generally to order. As they are very poor, they cannot afford to work on their own account on a commercial scale. The village usually contains a recognized *desa-asari* (village smith) to whom the farmers pay a certain amount of paddy at the harvesting season of the year for the repair of their implements. None but the village-smith is entitled to this dole. These may entertain apprentices from their own caste-people, though the

31: Slater S-5 (1916-1917) 1918 AWI India
Kerala AWII

Labour cost of cultivation of one acre of paddy.

For this area 8½ paras * of seed will be used.

Nature of work.	Rate of wages.	Total number of days.	Total amount of wages.	In kind or money.	Remarks.
Ploughing ...	3 as. or 3 ed. of paddy per half-day.	25	RS. A. 4 12	Both customery.	The ploughman works only during the first half of the day. He is expected to plough three times over an area of one para of seed capacity in a half day; and the land requires nine ploughings.
Plucking for replanting.	5 as. or 5 ed. of paddy per day (piece-wages).	8	2 8	Do.	Women chiefly employed. One person plucks one para-seed-area per day and is paid 5 ed. of paddy.
Replanting.	Earns 5 as. or 5 ed. of paddy per day (piece-wages).	4	1 4	Do.	Half the labour of plucking.
Weeding ...	4 as. or 4 ed. of paddy per para.		2 2	Do.	Only when transplantation does not take place.
Water-inspection.	4 as. per day ...	for 3 months.	1 13	Do.	One person can supervise 12½ acres.
Safe-keeping of matured paddy.	4 paras of paddy (Rs. 2) for 15 days.	15 to 20	2 0	Do.	At the period of harvest he is paid in kind.
Harvesting (including mowing, thrashing, etc.).	For every six paras of paddy gathered one para is paid.				Women chiefly engaged.

Note.—The yield per para is 10 to 20 fold †; and in specially favoured lands even more. In this table the price of 1 *edangali* of paddy is taken to be 1 anna (which was the market rate 1916-1917).

Statement showing the prices of staple food-grains in the Cochin State for the year 1915-6.

Articles.	Prices per maund of 82⅔ lb.	
	1914-5.	1915-6.
	RS. A. P.	RS. A. P.
Rice (husked)	6 8 11	6 5 10
Wheat	5 14 1	5 15 11
Peas	5 10 6	5 12 1
Dholl	6 8 11	7 5 2
Gram	3 8 0	3 10 7
Gingelly	9 9 7	8 6 1
Green peas	3 5 11	5 7 5
Bengal gram	5 15 2	5 15 9

* [Approximately 180 lb., an excessive quantity. "Transplanted, 20 lb. in 7 cents of land will plant up one acre. But this seed-rate is usually very largely exceeded, up to 150 lb. per acre being used" Wood, Notebook of Agricultural Facts, p. 52.—Ed.]

† [I.e., 16 to 32 cwt. per acre, worth about Rs. 50 to 100. With the lower yield the net return is Rs. 31 per acre, with the higher Rs. 75, from which cost of seed must be subtracted. —Ed.]

31: Slater
31: Slater 5-5 (1916-1917) 1918 AWI India
Kerala AWII

smiths, masons etc., four annas a day. But a skilful artisan earns 6 annas a day. But these people do not generally work at the customer's house, but they are given orders for the things and when they bring them are paid the price. Sometimes they are given the metal and the wages for each particular kind of work. 465

The making of ornaments is one of the weaknesses of Indians and consequently goldsmiths are in no difficulty to get work. In Malabar in former days costly ornaments were confined to Brahmans, but nowadays all classes are imitating the Brahmans in that respect. It is to be deplored. The number of goldsmith families has steadily increased from two to seven within ten years. They are always given the metal and given the wages for the particular kind of work, ranging from Re. 1 to Rs. 30 for the most complicated work which may employ one man for a whole month. A ring may cost Rs. 2 in wage. The same is the case of coppersmith. The wages depend upon the art and the size of the vessel. A big vessel may fetch him Rs. 20. 465 326

In kind.—The chief labour of the agricultural classes for which wages are paid in kind is the climbing of coconut trees and felling the fruit, and the sowing of paddy. One coconut is given if a man climbs four trees. An ordinary man can climb forty trees a day and he can earn ten coconuts, which according to the present price may bring him 8 annas. This has been the custom for a long time and this rate of wage has shown no sign of improvement since the labourers themselves do not demand more; because the price of coconuts has steadily increased and with that rise their wages also must rise. 465

The sowing of paddy is generally done by women who receive as wage one-tenth of the quantity of paddy sown. [462]

It may be remarked here that throughout the whole of Malabar the Pariyas and other untouchables such as Cherumas, Nayadis, etc., are always paid 2 Edangalis of paddy for men (1½ Edangalis for women) whatever kind of work they do, per day. This has been their wage from time immemorial.

Current prices of staples.—A bag of rice containing 8 paras * costs Rs. 12-4-0, if of inferior sort, Rs. 10. Fish 1 pie † for five small fishes, salt 2 annas for 1 Madras measure. 435 [804]

It may be noticed here that the Muhammadan and Christian labour costs more than the Hindu labour, since those two classes can perform a greater quantity of work because of their superior physical strength.

Savings and debts.—The number of families which have made savings may be estimated as between 75 and 100, of whom ten to fifteen may be Muhammadans, fifteen to twenty of lower castes, and the remainder of higher castes. But the persons who have lost their money are very numerous, probably between 200 and 300. Some lost through trade, many through litigation. But the primary cause of loss of property is the peculiar tenure of land as explained above. Perhaps all or nearly all the savings of the higher classes are used as loans to neighbours. The amount may be estimated at Rs. 50,000. 454

About Rs. 2,000 a year is spent on jewellery.

The estimated income from land and from other sources for this village is Rs. 2,50,000 a year for a population of 7,596, out of 434

* [1⅝ lb.—Ed.]

† [12 pies = 1 anna = 1 *d.*—Ed.]

31: Slater S-5 (1916-1917) 1918 AWI India
Kerala AWII

use. No other manure is used. Green manure is not grown but is got from somewhere or other according to circumstances. Varatties are not made. Wood fuel is the only sort used. 241 [372]

Insect pests.—Of these, the most ruinous is the "Chazhi" the terror of the ryot. The chazhi is a small insect of the locust species half an inch long which in millions appear in a few seasons and spread desolation in the paddy fields. Two remedies are current against this pestilence: (1) catching them directly by drawing a cloth (which serves the purpose of a net) attached to two handsticks over the crops and thus killing them; (2) but by far the most efficacious remedy in the estimation of the cultivator is the putting of a talisman in the fields which a local conjurer (Mandravadi) has prepared for him. What chazhi is to paddy "Mahali" is to the arecanut, the only difference being that in this case nothing is believed to be possible to combat the calamity. 242 [789]

Cattle diseases are (1) hoof disease, (2) Koraladappan (swelling in the neck), (3) Thada (mumps), (4) obstruction of urine and dung, (5) sudden epileptic attacks, and other diseases whose causes and cure are unknown to the peasant. Poisoning is sometimes done by Paraiyas of neighbouring desams for the sake of getting the flesh. For beef is eaten only by this lowest class and when cattle die they will be called to remove the carcase. A number of cattle are annually destroyed by tigers also which often venture into the sheds of the peasants. Talismans and offerings to deities are conceived to be the only remedy. 232 [789]

No assistance is obtained from the Agricultural department, nor any from any veterinary doctor.

Wood is commonly got for all uses from private trees; but the forest also supplies sometimes wood for small necessities. For building purposes, wood is purchased—not from any fixed place. 313

Houses.—The depressed castes have miserable hovels for their houses. A mud wall of five feet height with a ruined roof which can protect the inmate neither from sun nor rain is the order of the day. 342

Except the palatial family homes of the two jenmis, there are no tiled houses. Terracing is not customary here. All other houses are thatched, and thatching is always of straw.

Most houses have gardens surrounding them, where arecanut trees, plantains, mango trees, jack, etc., are grown. They are joyful to look at. 351

The maximum distance of cultivated lands from the home of cultivator is one mile.

An acre of land costs from Rs. 200 to Rs. 300. But purchases on jenmi tenure are worth above Rs. 500. But it is impossible to acquire jenmam property except for jenmis; for the jenmis are jealous guardians of their lands and never sell lands once acquired. Direct threatenings and indirect intimidation are used by them to obtain the jenmam right of lands if held by any lesser landowner. 423 [435]

Subsidiary industries.—Neither weaving nor spinning have ever been practised in this desam. 463

Other crafts—

1. Arrack and jaggery making.
2. Ironsmith.

31: Slater S-5 (1916-1917) 1918 AWI India
Kerala AWII

west, and sold there. The profit of the bargain is four annas. Twelve families subsist on this trade. 252

Buttermilk, ghee and butter are made and sold by some families. But this is not a steady trade. It is dependent on cows giving birth. 234

Village trade.—The volume and the extent of village trade is limited; the wants are few and easily satisfied. Paddy seed for cultivation is not purchased but borrowed from the landlord at an interest of sixty per cent. The amount borrowed with the interest thereon is annually given back to the landlord and again borrowed at the sowing season. The borrower is bound to return paddy fit for seeding. 438 426

Other commodities useful for agriculture, such as ropes, vessels used for lifting water, etc., are purchased from the little town of Kunnankulam, eight miles off and belonging to the Native State of Cochin. There is a big bazaar at Kunnankulam where almost all necessaries and luxuries are sold. But the usual market for the village trade is that held on every Thursday at Chalisseri, a large village three miles to the west of Kothachira. People take areca, paddy and other vegetables to this market, get these sold there and with the money thus obtained purchase necessaries; sometimes articles are directly exchanged for paddy. The chief necessaries usually purchased are salt, fish, oil, kerosene, chillis, onions, and cloth to wear. Men and women wear simply one *mundu* around the waist. Hence little clothing is required. 438 443 [291]

Chalisseri is in a way an important place. Much trade in areca is carried on here. The agents of the areca traders of Chalisseri come to each family and purchase directly the quantities each has to sell. The quantity conveyed to market by the ryot himself is not very great. The selling price of areca varies from three to five rupees per tulam (= 25 lb.) according to time and circumstances. The arecanut traders of Chalisseri are absolute masters of this business and often impose their own terms upon the cultivator. After being cut and dried areca is exported by the former into the districts of the east. The best areca grower has sold nuts worth Rs. 400 a year. [435]

The road that runs from the Pattambai railway station to Chowghat passes through Chalisseri. This is the nearest road to Kothachira people. It winds near Kutnad and thus runs parallel to the northern and western boundaries of Kothachira at a distance of two miles from each. A by-road cut from the western arm of the main road to the house of one of the jenmis at his own expense, has long been out of use and is not adapted for public purposes. 491

The idea of co-operation is unknown. A public road opened along the private footpath that runs between Karuvathur, a village six miles to the east of Kothachira, and Chalisseri, would be of immense use to the public of these parts. Much traffic is carried on along this footpath between these places specially on market days. It would run across Peringode and along the boundary between Mathur and Kothachira and thus benefit all these desams. [476]

Economic condition of village.—The economic condition of this desam is rather discouraging. The people are deep in debt, are overworked and underfed and ground down by a double tyranny, the tyranny of the landlord who is also the money-lender, and the tyranny of deep-rooted custom in all their lives and walks. 511

31: Slater S-5 (1916-1917) 1918 AWI India
Kerala AWII

Wages are paid both in money and in kind; more often in kind since they find it more to their immediate advantage. The rate of wages is two annas six pies or its equivalent in corn at the standard price, for an unskilled labourer; and four and at times five annas for skilled artisans.

The price of paddy varies in different seasons. In the harvest season and sometimes after it, the price ranges between 2½ and 2 paras a rupee. But towards June and July the price goes up to between 1 and 1½ paras a rupee. This is the only food which can be called staple. In times of scarcity the poorer people depend on jack fruits, mango and fish, of which the latter alone need be purchased, and that is cheaper than other foods.

Excepting the jenmis who are large zamindars, there are but six houses which have made savings. The bulk of the families are unable to liberate themselves from the grasp of the creditors.

The capital saved by these families is employed in lending to the needy agriculturists. A microscopically small amount has gone on jewellery among these middle class families, but with the jenmi the case is different. It looks as though the capitalist knows no way to employ his capital except lending to neighbours.

Debt.—The extent of indebtedness cannot be definitely ascertained by enquiry. But from what I have been able to gather from the accounts of two capitalist families, I have been able to make an almost correct estimate of the state of things with the agriculturist. Ranging from Rs. 10 to Rs. 800 one family account consists of the names of thirty debtors from Kothachira. These are all standing debts and the interest on these varies from 9 per cent to 12 per cent. Twelve per cent is the current rate of "polite" interest, as people call it. But there are capitalists who lend money even at 24 and 30 per cent in the neighbourhood. The capital thus employed, however, is not the result of direct saving but is ancestral property bequeathed by their fathers, who were the heads of a jenmi family.

Thus we find that capitalists who have money at all to lend, have got the money by other sources and not by saving. The agriculturist has many difficulties to meet with. He has no land and not enough stock and implements. His family is large and the expense is ordinarily far beyond his income. From his field cultivation, after all expenses have been deducted, he gets very little for himself. The rents are very high. The capital employed in stock is vital to him and yearly his lot is to lose by death of cattle either by disease or by wild beasts. Last year there were two cases of the latter. Those who have garden cultivation have this profit to utilize. But the majority own no gardens. The population has grown but not the means of subsistence, and no family except the few named find it possible to maintain their family purely from the proceeds of their toil. Thus they incur debt, but debt once incurred hangs heavy on the debtor. Not only is he unable to find means to pay the high rate of interest on the previous year's debt, but he must borrow at all costs again if he is to avoid absolute starvation of his family. This is regularly continued. Litigation follows and an additional and unprofitable expense is thus laid on his head. Law interferes and whatever property he has is lost. But the law does not kill the people, and

31: Slater S-5 (1916-1917) 1918 AWI India
Kerala AWII

443 Of these paddy is mostly bought by outsiders and non-agricultural labourers, such as carpenters or blacksmiths. Most labourers
438 indeed get their wages in paddy. Metallic articles are mostly
[465] bought by blacksmiths, both in this village (to a very small extent) and by outsiders. So, too, in regard to coconut oil, gingelly oil, tobacco, sugar and all other articles, large quantities are purchased by persons coming from other villages, where there are no shops. Probably about 50 per cent of the total sales are to outsiders.

As regards the quantities of these articles consumed, the shopkeeper says that there is no difference between what is sold now and what was sold 25 years ago when the shop was started. Only the prices have risen. One or two new articles of consumption have however been introduced, e.g., coffee, the sale of which is increasing. Iron and other metallic articles began to be sold some 15 years ago and the sales are increasing, though very little is consumed in the village. Besides the articles mentioned the shop deals in sundry small articles of consumption in the village, such as medicinal products, garlic and onions (consumed by the
438 Cherumas and the lower castes), chillis, spices and the like. An important commercial product is pepper. The village produces about Rs. 2,000 worth of it and the shop buys about Rs. 1,000 worth from other villages. Very little of this is sold in the village. It is sent to the towns and commercial centres. The trade is very profitable and may be extended.

The commodities sold in the village are brought from the nearest towns or trading centres, like Palghat, Calicut, Trichur and Ponnāni. The usual means of transportation are bullock carts. It does not pay to bring small quantities by railway and there is also the risk of delay and damage. The villagers also sometimes buy their clothing and other articles in towns or at the Vaniamkulam fair. About a thousand rupees worth of vegetable and garden produce is also taken to the fair in a year for sale, with the proceeds of which the villagers buy cattle and implements or commodities for consumption. The local prices of commodities are 10 per cent higher than prices in towns, about 4 per cent representing cost of carriage and the remainder interest and profit. After deducting interest on capital invested at 9 per cent, the owner of the shop makes a fair sum as wages of superintendence and profits—about Rs. 400 per annum, excluding the profits from the pepper trade which are at least as much again as this. The shop also sells paper and other articles of stationery for the use of villagers at fair prices.

435 As regards the rise in retail prices in recent years, the village accounts show a general rise in prices of nearly 100 per cent—salt alone having fallen in price. The rise is most marked in foodstuffs and other articles of immediate consumption, and in metallic articles. Betel leaves have not risen much in price. Paddy, which used to sell at 2½ to 3 paras per rupee 25 years ago, now sells at 1·2 to 1·8 or 2 paras. Oils have generally risen at least 100 per cent in 25 years. So also sugar, tobacco and the like.

432 If one compares the total value of purchases by different classes, one will find that the many purchases of the few well-to-do persons and the few small purchases from day to day of the great majority of poor persons roughly equal one another. The Cherumas and

31: Slater S-5 (1916-1917) 1918 AWI India
Kerala AWII

563 other work demanding skill or strength is mainly done by them.
463 They handle tools better than the Hindus. A strong Muhammadan coolie will carry sacks of grain of 8 paras weighing 160 lb. a distance of two miles half a dozen times in a day, a Hindu coolie will carry only half a sack.

462 *Women's work.*—In the better class families, especially the Brahman and higher Nayar families, women confine themselves to household business and looking after the children. Among the lower castes they work for their living. They help the men in agricultural work, such as transplanting seedlings, sowing, reaping and threshing. Rice husking is their special occupation, they also carry paddy from place to place on their heads. They are paid less than the men, three edangalis where men get four or five. Children also help in agricultural work and in looking after cattle, sheep and goats. Cheruma women work just like the men and get about the same wages. Some Nayar women go out to work in Brahman families.

435 Rice is the staple food, either by itself or in the form of kanji
[262] (a sort of watery gruel). Its price depends on that of paddy. The price of paddy is lowest after the first harvest in September, being 2 to 2½ paras (ten edangalis = one para) for one rupee. In about two months the price rises, and paddy sells at about 1¾ paras for a rupee. With the second harvest in December or January the price again falls, but rises gradually till July or August to its maximum height and grain is only 1·5 to 1·8 paras for a rupee. Towards the end of June 1916 it was only 1·6 for a rupee. Price fluctuations are greater or less according to weather conditions and outside demand. In August 1917 the price was 1·3 paras per rupee, and prices were still rising.

454 Not more than 5 per cent, or 20 families, mostly of the higher classes, have made savings.

Very little money is invested in agricultural or industrial capital of the productive kind except the ordinary farming stock. Some persons (foolishly) invest their money in Kanom land the value of which largely depends on the goodwill of the landlord. Few are rich enough to buy land in absolute ownership.

Savings bank accounts are unknown. No one apparently has any.

426 Loans to neighbours is a popular and common way of utilizing savings, especially loans to agriculturists for short periods on high interest, 12 to 24 per cent. Even higher interest is obtained by speculative loans on grain. Thus before harvest a poor peasant may borrow grain for a month, repaying 102 or 102½ measures for 100 measures borrowed.

301 Most saving families possess some jewellery and other movable
454 goods worth about one-eighth to half of their total capital, an obvious attraction to thieves in former years. The amount of jewellery is deceptive as a test of prosperity.

454 Savings are utilized also for the purchase of houses, gardens, and increased consumption. Under this head should also be mentioned small investments in what are called 'Kuris' (chit-funds).

426 The majority of the villagers are in debt, for smaller or larger
735 amounts. During certain seasons of the year many families

31: Slater S-5 (1916-1917) 1918 AWI India
Kerala AWII

actually go without the needed food and keep body and soul together as best they can. Well may economists and others speak of the power of resistance of the Indian peasant, his power of doing without! I wish I had some photographs of the living skeletons who call forth this praise!! But they are proud; they will never tell you the whole story. The village schoolmasters tell me that boys do not attend school regularly (though it is free) owing to actual starvation, cold hunger takes away all appetite for study. There are practically very few who do not owe something to the village money-lenders. Tenants are always in arrears with their rents; they sometimes even consume the grain reserved for seed. Villagers come begging for small loans just to tide over difficulties from day to day. The high rate of interest includes a large percentage of insurance for risk. Debts vary from a few rupees to hundreds. Exact information is not available.

Causes of indebtedness.—Poverty is of course the chief cause; other causes are want of suitable work, especially for women of the lower classes, the low rate of wages, due in its turn to inefficiency and weakness in bargaining, which exist side by side with improvident habits of the labourers, who are as a rule ignorant (though intelligent) and stoic; the growth of population without a proportionate increase in agricultural products and foodstuffs; the high, almost ruinous rates of interest, often as high as 36 per cent, which are both a cause and a result of poverty; an all round rise in prices, especially in foodstuffs; fast living and improvident habits among the richer—though this is rare—due to the desire to better their standard of life in response to western influences coming from cities. The Brahmans borrow largely to educate their sons and to marry their daughters. General extravagance is however unknown especially in food and dress. Many of the poorer villagers beg you to give them a meal or one of your old used up cloths.

Only a very small percentage, not more than 10 per cent, of the debtors have liberated themselves from debt. The tendency is for a perpetuation of debts. Debt is driving many villagers to other and distant places. When they have earned a small sum they return, but are soon forced into their old state. Of course provident habits do not always exist.

There is no co-operative credit society in the village.

There is no communal income of any sort in the village.

Selling prices of land.—Owing to the prestige and social importance of landownership, the landowning class never sell their lands even for good prices unless driven to it by necessity. This raises the price of land. The rights of ownership peculiar to Malabar, known as janmam, are very complete and thorough and not ordinarily found in ryotwari areas. Janmam land yields very low rates of interest on the price paid for it; prices are so high, having risen 25 to 50 per cent in recent times. Janmam land is usually let out on lease, usually for twelve years renewable at the option of the owner, if the due renewal fees are paid. Even Kanom tenure rights have risen in value, though they depend so much on the good will of the landlord, the tenants having no legal protection against eviction, or arbitrary enhancement of rents. Kanom lands

31: Slater S-5 (1916-1917) 1918 AWI India
Kerala AWII

423 are sublet to the actual cultivators, who are a rack-rented peasantry. The Kanom tenant, even when he does not himself cultivate the
435 land, gets a higher return than the janmi on his capital; this is probably due to the insecurity of his tenure and his assumption of risks in relation to the actual cultivators. The renewal fees are heavy and many people contract debt to pay them. Some unscrupulous janmis or their agents arbitrarily enhance the rents payable by the Kanomdar and turn him out if he refuses to pay. The principal landlord of this village does not belong to this class.

796 The village spends between Rs. 150 and Rs. 200 annually on religious festivals. This is the common expenditure and is raised by subscription. It excludes small individual expenditures.

The village temple was built many years ago. No new one has been built.

164 *Sanitary condition.*—Malaria is unknown, but other fevers are occasionally seen. Cholera visits the village at rare intervals. Plague is unknown. Tuberculosis may be rarely met with. Small-pox also visits the village at rare intervals. From 125 to 150 out of every 1,000 children born die in their first year. Thus in 1915 while 81 children were born 10 died before completing one year. This is the figure given in the village register. It needs some correction and the figures should be slightly higher. The rate of infantile mortality varies with the seasons, etc. A few cases of snake-bites are recorded, but fatality owing to this cause is not high. I hear that sometimes the Hon'ble Moopil Nayar of Kavalappara (our representative in the Legislative Council) gives free medical help in such cases.

759 No reliable medical assistance of an effective kind is available. There are no English doctors in or near the village and few could afford to pay their fees even if they did exist. There are one or two ayurvedic physicians, whom one should more correctly call quacks.* They have no scientific knowledge and cannot properly diagnose. They take advantage of the simple credulity and superstition of the ignorant villagers and give an air of mystery to their art by the practice of superstitious rites akin to witchcraft. I believe there is much preventible disease in the village. Some remedy is badly needed. It would be a useful reform that the village officers and the village schoolmasters should know something of medicine, hygiene, and sanitation. Then they could at least instruct the villagers as to what ought not to be done in the care and treatment of the sick. There is a proposal now to found an ayurvedic college and laboratory at Shoranur, near our village. When it is accomplished a better state of things is hoped for, as the physicians would be really capable men and reliable, though practising the ayurvedic system, in which the people have faith.

273 Insanitary habits are rare. The Cherumas and other depressed
276 classes drink. Chewing of tobacco and betel is common, but this can hardly be called insanitary.

* This remark does not apply to real students and practitioners of the indigenous system of medicine, but only to the unworthy representatives of the science in the village. There is high official and non-official testimony to the real worth of ayurveda as it *ought* to be practised, and as it is practised by many learned persons all over the country.

31: Slater S-5 (1916-1917) 1918 AWI India
Kerala AWII

EXPENSES AND PROFITS OF A WORKING TENANT.

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241

Estimates for 1 acre under paddy.

Fertile two-crop land.—(On two-crop land the tenant pays the kanomdar the whole of the first crop, which is always more than the second crop, and averages about 60 per cent of the total of the two together, kanomdar paying kist.)

Cost of cultivation—

	Paddy. PARAS.	Money. RS. A. P.
Seed for first sowing	5	
Seed for second sowing	·7	
Wages for sowing	15	
Manure, 125 baskets of cow-dung with ashes and green manure ...		3 8 0
Reaping and threshing wages (10 per cent)	13	
Allowances to village craftsmen ...	1½	
Allowances to labourers for festivals, child birth, etc.	1½	
Clothes to labourers		0 8 0
Use of oxen		5 0 0
Renewals of agricultural implements		1 2 0
Total ...	43 and	10 2 0

Estimated crop—190 *paras*—

Distribution of crop—

	PARAS.
Kanomdar's share, estimated at 60 per cent	114
Sub-tenant's share (gross)	76
	190

	PARAS.
Cultivation expenses in grain	43
Sub-tenant's grain surplus	33
	76

	RS. A. P.
Money value of 33 paras	22 0 0
Cultivation expenses in money	10 2 0
Sub-tenant's profit and wages of supervision ...	11 14 0

The working tenant also has the straw, and the wages that he may save by his own labour and that of his family.

Moderately good paddy land—

Costs—

	PARAS.	RS. A. P.
Seed for two sowings (7½ paras) ...	15	
Reaping and threshing wages	10	
Other expenses as before	18	and 9 6 0
	43	and 9 6 0

31: Slater S-5 (1916-1917) 1918 AWI India
Kerala AWII

241
435

Product—150 *paras*—	PARAS.	RS.	A.	P.
Kanomdar's share	90			
Tenant's share	60			
,, grain surplus, 17 paras, worth ..		11	6	0
,, money expenses		9	6	0
,, money profit		2	0	0

Good one-crop land—

Posts—	PARAS.			
Seed	8			
Wages for sowing	8			
Reaping and threshing wages	6			
Allowances	2			
Money expenses		6	0	0
Total ...	24 and	6	0	0

Product 88 paras, tenant's share being 44 paras.

Grain surplus 20 paras, worth Rs. 14, leaving a money profit of Rs. 8.

Inferior one-crop land.—Here the produce falls to about 72 paras, of which the sub-tenant may get 36 paras. The money profit is Rs. 2.

A small share of the straw is paid to the kanomdar, but the working tenant keeps about nine-tenths. This is not much more than sufficient to feed his oxen.

A small extra rent, in the large Malabar variety of banana, is paid to the kanomdar in the *Onam* festival by each sub-tenant, of an estimated value of eight or nine annas, irrespective of the size of holding.

511 *The annual budget of a typical well-to-do Nayar, a leading kanomdar.*

Income—	PARAS.
The probable income from lands wet and dry together having an extent of 27 and 40 acres, respectively.	4,600 to 5,000
Expenses—	
Food for the family of eight members, two male servants and one female servant	700
Cherumas' wages for the year	950
Seeds	400
Bran, oil-cake and other food for cattle purchased in addition to what is found in the house	75
Janmi's michavaram (rent)	600
Government assessment at two paras for a rupee ...	400
Extra expenses such as salts, oil, etc.	90
Feasts in the temple	60
Charity, such as giving alms and pujari's wages ...	50
The village festivals	10
Sradhas (six in all) (dead relations)	30
Seven kuris	710
Interest on loans (calculated as above) on Rs. 1,500 ...	270